

Shp Dec 28

Work Order ID 94429

December-18-12 1:09:16 PM

\*94429\*

Page 1

Item ID: D2580-041

Accept

\*N900040100\*

Setup Start \*NS1\*

Revision ID:

Stop \*NS2\*

Item Name: 205 Skidtube Ass'y

Start Date: 12/18/12 Start Qty: 1.00 \*1\*

Cust Item ID:

Required Date: 12/28/12 Req'd Qty: 1.00 \*1\*

Customer:

Reference:

Approvals: Process Plan: W Date: Tooling: Date:

Run Start \*NR1\*

QC: Date: SPC (Y/N): Date:

Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D2580

E

0.00

\*110\*

BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

0.00

\*120\*

Skidtubes

Skidtubes

Memo

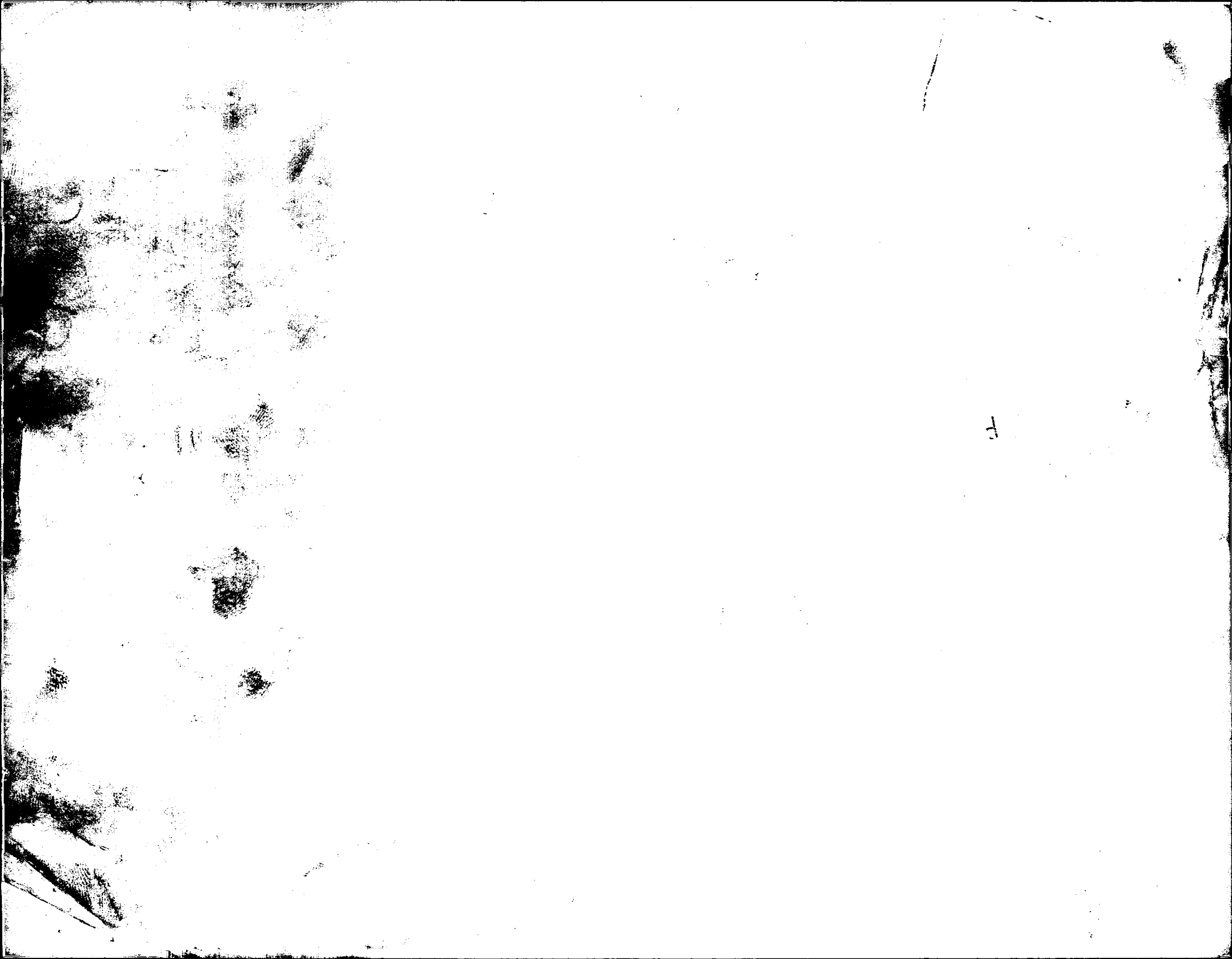
0.00

1- Deburr ends and remove bending marks

2- Prepare tube for welding as per QSI 004

-DC 12/12/19

-DC 12/12/19



Work Order ID 94429

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Item ID: D2580-041 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: 205 Skidtube Ass'y  
 Start Date: 12/18/12 Start Qty: 1.00 \*1\* Cust Item ID:  
 Required Date: 12/28/12 Req'd Qty: 1.00 \*1\* Customer:  
 Reference:

Approvals: Process Plan: Date: Tooling: Date: Run Start \*NR1\*  
 QC: Date: SPC (Y/N): Date: Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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130	QC5- Inspect part completeness to step on W/O	0.00							
*130*									
QC	Memo	0.00							
Quality Control									

D4  
89  
12-12-19

140		0.00							
*140*									
Skidtubes	Memo	0.00							
Skidtubes									

1-Weld step D2576 as per Dwg. D2580 and QSI 004  
 A/R Aluminum Rod M122324

BE 12-12-19

2-Grind welds on step as per Dwg D2580

3- Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002  
 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start  
 expansion and finish with 1/2 x 18G to achieve dwg dimension.

4-Drill holes for wearplates using DT 8217 & DT8937, 7.40" from most fwd  
 saddle holes (ref only) Open holes to 19/64", adjust stopper not to hit  
 web. Debur

6-Drill pilot holes for aft cap using DT 8215 Open holes to 0.208". Debur

7-Drill pilot holes for Tow ring using DT8091, open to .640" and Debur

OC 12/12/19

# Work Order ID 94429

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Item ID: D2580-041 Accept \*N900040100\* Setup Start \*NS1\*  
 Revision ID: Stop \*NS2\*  
 Item Name: 205 Skidtube Ass'y  
 Start Date: 12/18/12 Start Qty: 1.00 \*1\* Cust Item ID:  
 Required Date: 12/28/12 Req'd Qty: 1.00 \*1\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
150 *150* QC Quality Control	QC10- Inspect visual per QSI004- ground welds  Memo	0.00  0.00	DAS 16 9-83	12/17/19					
160 *160* QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00	DAS 16 9-83	12/21/19					
170 *170* HandFinish Hand Finishing	Pressure Wash per QSI005 4.3  Memo ✓ Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.	0.00  0.00							1x 6 11 12/20



**\*94429\***

December-18-12 1:09:16 PM

**Accept**

**\*N900040100\***

Setup Start \*NS1\*

Stop \*NS2\*

**Item Name:** 205 Skidtube Ass'y

**Start Date:** 12/18/12      **Start Qty:** 1.00      **\*1\***

**Cust Item ID:**

**Required Date:** 12/28/12      **Req'd Qty:** 1.00      **\* 1 \***

**Customer:**

**Reference:**

Run Start \*NR1\*

**Approvals:** \_\_\_\_\_ **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Stop \*NR2\*

OC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

**Insp.  
Stamp**

180

White Gloss(Ref:4.3.5.1) per QSI005-2.3-Alum

0.00

**\*180\***

Powdercoat

## Powder Coating

## Memo

START TIME:

OVEN TEMPERATURE:

FINISH TIME:

0.00

190

### QC3- Inspect Part Finish

0.00

\*190\*

OC

## Quality Control

## Memo

0.00



# Work Order ID 94429

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Item ID: D2580-041 Accept \*N900040100\* Setup Start \*NS1\*  
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 Item Name: 205 Skidtube Ass'y  
 Start Date: 12/18/12 Start Qty: 1.00 \*1\* Cust Item ID:  
 Required Date: 12/28/12 Req'd Qty: 1.00 \*1\* Customer:  
 Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start \*NR1\*  
 QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop \*NR2\*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200		0.00							
*200*									
HandFinish		0.00							
Hand Finishing	<p>Memo</p> <p>2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580</p> <p>3-Inspect for foreign object per QSI 024</p> <p>4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step &amp; Aft Cap with Sikaflex. Clean excess adhesive                      A/R Sikaflex-291 11/12/33                      Sikaflex expire date: 13/06</p> <p>5-Wing Walk as per Dwg D2580 and QSI 005 4.4                      Batch: 11/22/521</p>								1x 6 11/12/21
210									
*210*									
QC									
Quality Control	<p>QC5- Inspect part completeness to step on W/O</p> <p>Memo</p> <p>Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024</p>	0.00							12/21/31





**Work Order ID 94429****\*94429\***

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Item ID: D2580-041

Accept

**\*N900040100\***Setup Start **\*NS1\***

Revision ID:

Stop **\*NS2\***

Item Name: 205 Skidtube Ass'y

Start Date: 12/18/12 Start Qty: 1.00

**\*1\***

Cust Item ID:

Required Date: 12/28/12 Req'd Qty: 1.00

**\*1\***

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start **\*NR1\***

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop **\*NR2\***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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220

Identify as per dwg &amp; Stock Location: \_\_\_\_\_

0.00

**\*220\***

Packaging

Packaging

Memo

0.00

Packaging

*SL 13/01/02*

230

QC21- Final Inspection - Work Order Release

0.00

**\*230\***

QC

Memo

0.00

Quality Control

*QC21 - 13/01/02*  
*U 13.01.02*

# Picklist Print

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Page 1

Work Order ID: 94429

Parent Item: D2580-041

Parent Item Name: 205 Skidtube Ass'y

Start Date: 12/18/12

Required Date: 12/28/12

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 12.12.18 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4202-1 Spacer		Manufactured	No				Each	389.0000					
				<u>Location</u>				<u>Loc Qty</u>					
				LG001				357					
				83263				3					
				84763				20					
				86003				10					
				87948				82					
				90795				242					
				LG002				32					
				78806				6					
				79810				26					
D2580-1 205 Skidtube bent detail		Manufactured	No				Each	6.0000					
				<u>Location</u>				<u>Loc Qty</u>					
				B93116									
				LG				6					
				76570				1					
				77679				2					
				84541				1					
				85894				1					
				88691				1					
D2576-3 Step (maching detail)		Manufactured	No				Each	51.0000					
				<u>Location</u>				<u>Loc Qty</u>					
				LG002				51					
				82257				1					
				86973				50					

DC 12<sup>20</sup>/12/19

(20)

DC 12<sup>1</sup>/12/19

(1)

BE 12-12-19

1

# Picklist Print

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Page 2

Work Order ID: 94429  
Parent Item: D2580-041  
Parent Item Name: 205 Skidtube Ass'y

Start Date: 12/18/12  
Start Qty: 1.00

Required Date: 12/28/12  
Required Qty: 1.00

D2855 Manufactured No

Each 122.0000

u 1 u/u/20

Location	Loc Qty	Loc Code
FP001	121	
73347	1	
86441	52	
88992	2	
89802	40	
93143	26	
ST019	1	
84952	1	

AN3-5A Purchased No

Each 1,019.0000

u 2 u/u/20

Location	Loc Qty	Loc Code
FP001	177	
122800	177	
GA	120	
117423	120	
ST350	222	
119355	200	
120187	22	
122800	0	
ST512	500	
122416	500	

AN960JD10L Washer \* NAS1149D0332J Purchased No

Each 0.0000

M122973

(x2) 2 u/u/20

# Picklist Print

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Page 3

Work Order ID: 94429

Parent Item: D2580-041

Parent Item Name: 205 Skidtube Ass'y

Start Date: 12/18/12

Required Date: 12/28/12

Start Qty: 1.00

Required Qty: 1.00

ALS7-1032-130

Insert

Purchased

No

Each

611.0000

50

ALS4-1032-130

Location

Loc Qty

Loc Code

FG

100

121444

100

FP001

352

1124080

x50

117717

27

118966

22

119530

73

119775

2

120181

12

121444

176

122474

3

122763

37

ST280

159

122763

159

Each

1,844.0000

50

AN3C4A

BOLT

Purchased

No

Pick  
SONYA

Location

Loc Qty

Loc Code

FG

20

122814

20

FP001

172

123759

172

ST512

1652

123759

1652

Each

0.0000

50

AN960C10L

washer

NAS1149C0332R

Purchased

No

Pick  
SONYA

1123759

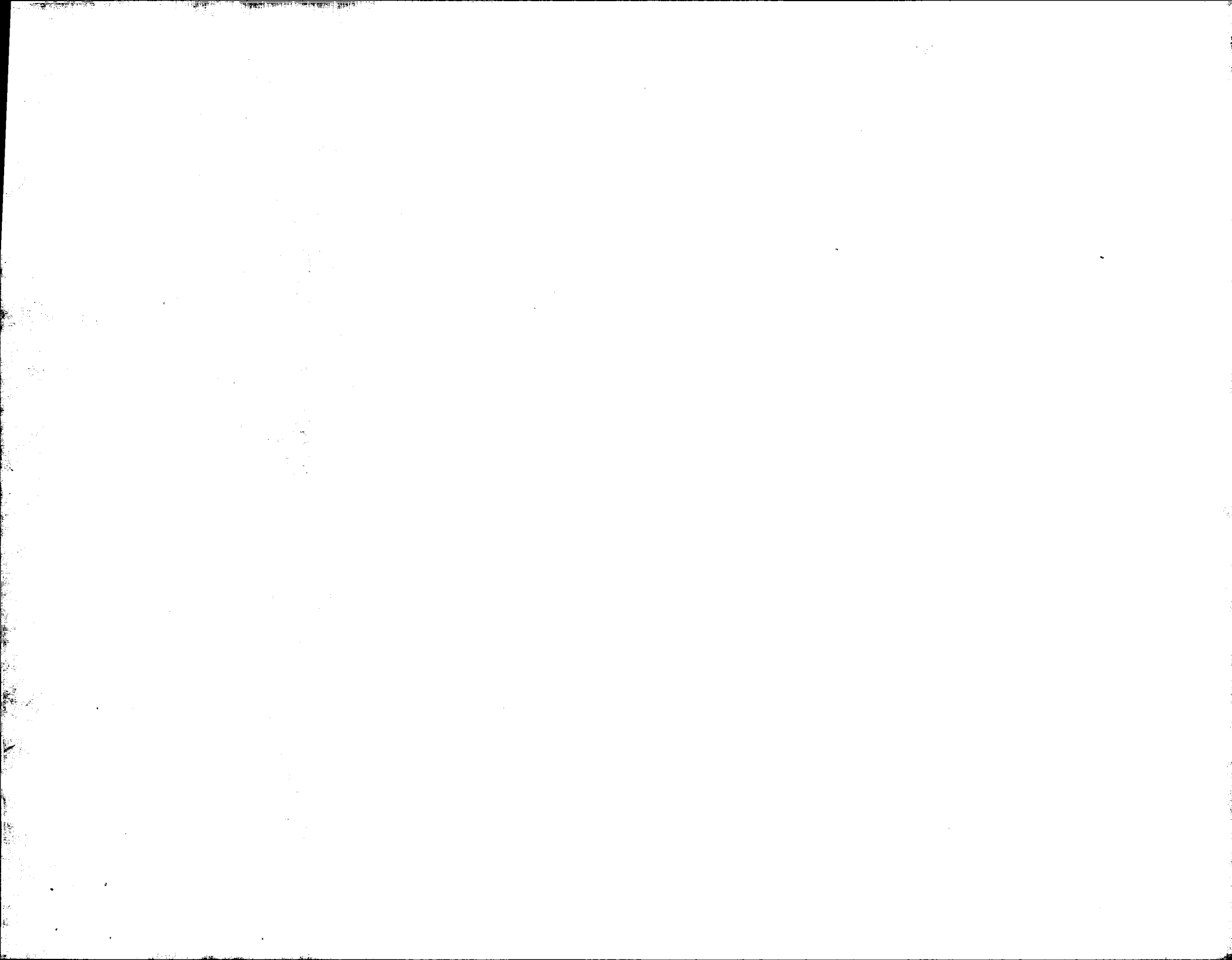
v50

50

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Shop Packet Print

Page 3



# Picklist Print

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Work Order ID: 94429

Parent Item: D2580-041

Parent Item Name: 205 Skidtube Ass'y

Start Date: 12/18/12

Required Date: 12/28/12

Start Qty: 1.00

Required Qty: 1.00

D2594-3  
O-Ring, 205 Skidtube

Manufactured No

Each 853.0000

16 u/n/z

Location	Loc Qty	Loc Code
FP001	853	
65518	41	
79496	708	
79573	50	
79755	54	

16

D2594-1  
Plug, 205 Skidtube

Manufactured No

Each 695.0000

16 u/n/z

Location	Loc Qty	Loc Code
FP001	668	
73401	30	
74442	92	
79495	28	
86391	84	
88509	85	
88922	18	
91949	91	
92554	160	
92862	80	
FP-001	27	
42807	27	

16

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Shop Packet Print

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LIST OF MATERIALS					DESCRIPTION
ITEM	QTY -041	QTY -045	QTY -047	PART NUMBER	
1	X			D2580-041	SKIDTUBE ASSEMBLY
2		X		D2580-045	SKIDTUBE ASSEMBLY
3			X	D2580-047	SKIDTUBE ASSEMBLY
4	1	1	1	D2500-1-190	EXTRUSION
5			16	D2570	BUSHING
6	1	1	1	D2576-3	STEP
7	20	24	25	D2579	SPACER
8	16	16	8	D2594-1	PLUG
9	16	16	8	D2594-3	O-RING
10	1	1	1	D2596	205 WEB
11	1	1	1	D2855	AFT CAP
12	1	1		D3564-5	WEARSHOE
13	1	1		D3564-9	WEARSHOE
14	1	1		D3564-11	WEARSHOE
15	1	1		D3564-13	WEARSHOE
16	2	2		D3566-1	GASKET
17	1	1		D3566-5	GASKET
18	1	1		D3566-13	GASKET
19			1	D4406-041	WEARPLATE ASSEMBLY
20			1	D4406-043	WEARPLATE ASSEMBLY
21	50	50		ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
22	50	50		AN3C4A	BOLT
23	2	2	2	AN3-5A	BOLT
24			8	AN4-45A	BOLT
25	50	50		NAS1149C0332R	WASHER (AN960C10L)
26	2	2	2	NAS1149D0332J	WASHER (AN960JD10L)
27			8	MS21042-4	NUT (OR MS21042L4)

# GENERAL NOTES:

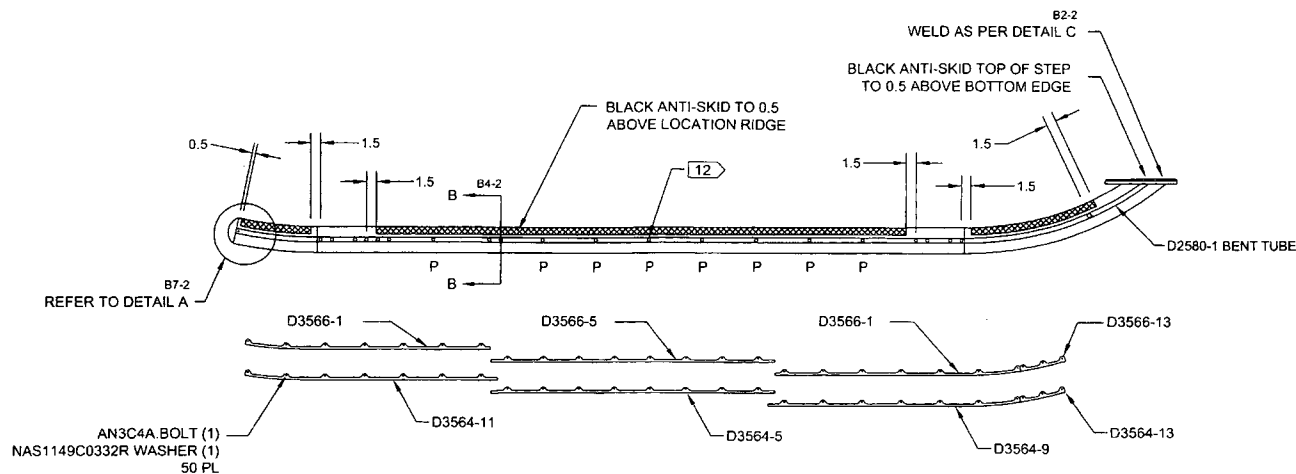
- 1) MATERIAL: N/A
- 2) FINISH: CHEMICAL CONVERSION PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY (-041/-047) GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3  
POWDER COAT ASSEMBLY (-045) GREEN SANDEX (REF 4.3.5.8) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4.
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: D2580-041 = 34.5 lbs  
D2580-045 = 34.5 lbs  
D2580-047 = 37.7 lbs
- 8) WELDING PER DART QSI 004.
- 9) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 10) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 11) USE DART DRILL TEMPLATE DT8217 & DT8937 ONLY FOR D2580-041/-045 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTIONS B-B AND F-F (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND NAS1149C0332R WASHERS WITH SIKAFLEX-241/291.
- 12) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES FOR D2580-041/-045 AND 8 PLACES FOR D2580-047)
- 13) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

DEO ATTACHED

RELEASED  
2011-08-29  
WD

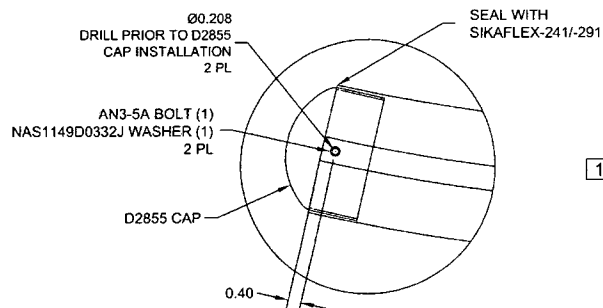
E	ADD D2580-047 (ZN C4-7) AND D2580-7 (ZN B3-8); INCLUDED DEO D2580-D-1; REFORMATTED DRAWING TO CURRENT STANDARDS; DT8217 & DT8937 WAS TD2577-205 (ZN C4-1)	RF	11.06.21
D	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/ 9183	PH	07.04.05
C	REDRAWN, INCLUDED DEO 9094/ 9097	CP	98.08.26
B	AS MANUFACTURED	DS	96.12.02
A	NEW ISSUE	DS	96.09.16
REV.	DESCRIPTION	BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	140	DRAWING NO.	REV. E
MFG. APPR.	140	D2580	SHEET 1 OF 8
APPROVED	140	TITLE	SCALE
DE APPR.	140	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	



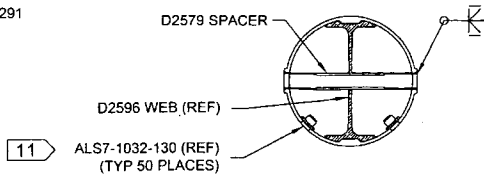


**D2580-041 ASSEMBLY DETAIL**

**DETAIL A** C7-2  
SCALE 5X



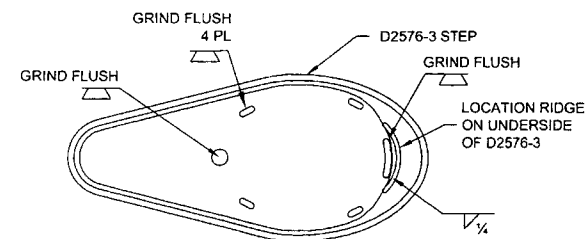
**SECTION B-B** D5-2  
SCALE 5X



AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

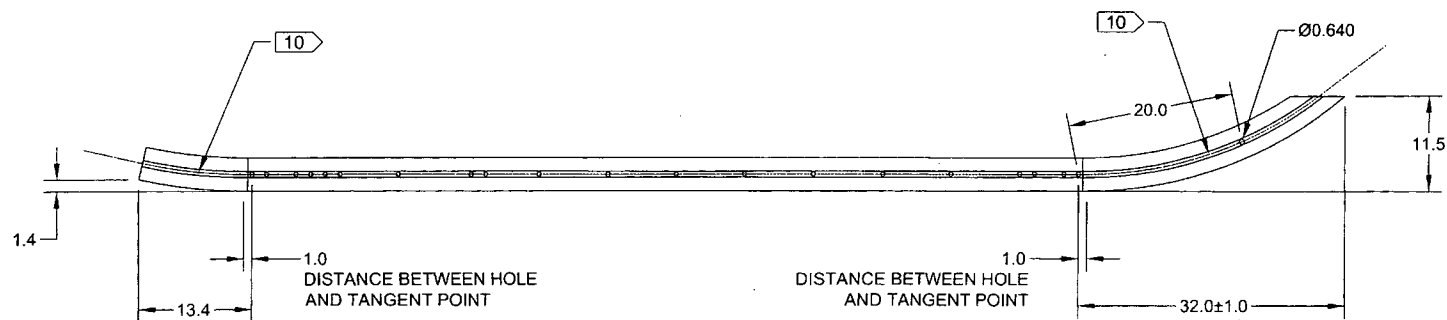
1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

**DETAIL C** D3-2  
SCALE 5X



DESIGN	4	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 2 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	<small>COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

DEO ATTACHED  
RELEASED  
2011-08-29

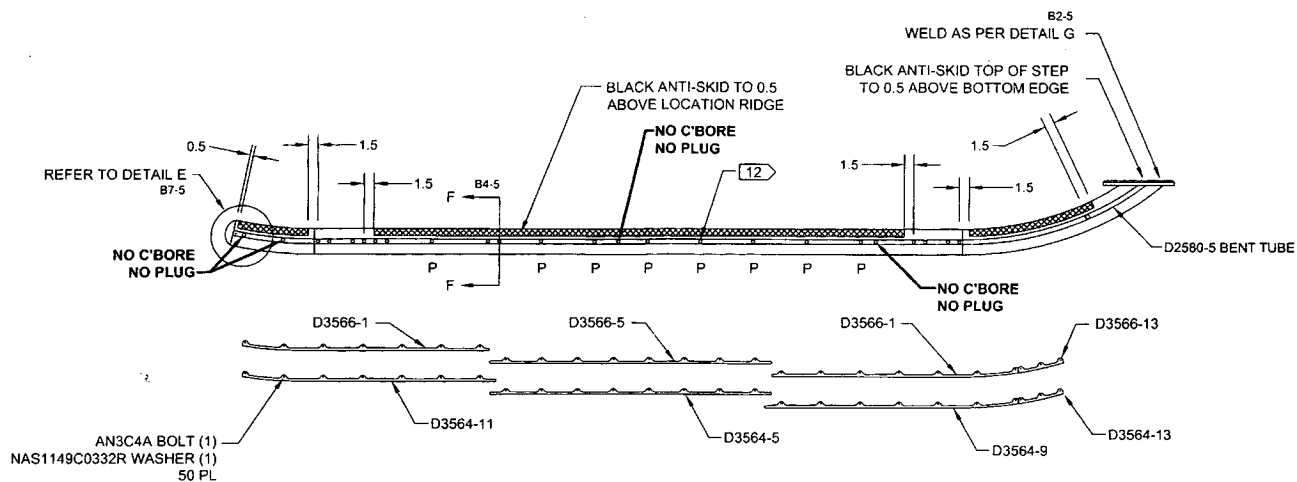


D2580-1 BENT TUBE  
(MAKE FROM D2580-101 TUBE)

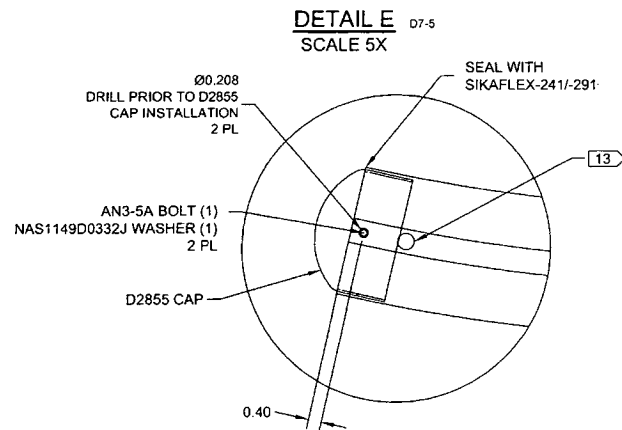
DEO ATTACHED

RELEASED  
2011-08-28

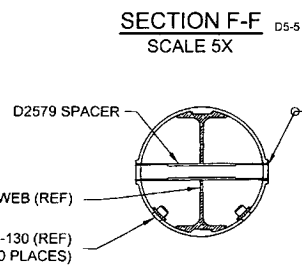
DESIGN	<del>RF</del>	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<del>RF</del>	DRAWING NO.	REV. E
MFG. APPR.	<del>RF</del>	D2580	SHEET 3 OF 8
APPROVED	<del>RF</del>	TITLE	SCALE
DE APPR.	<del>RF</del>	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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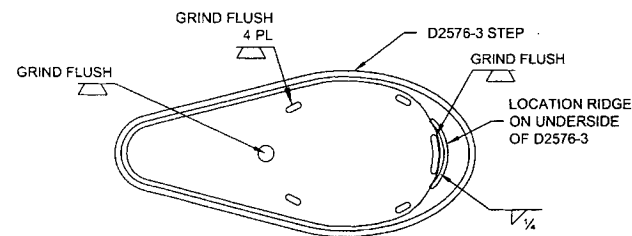
**D2580-045 ASSEMBLY DETAIL**



**DETAIL E**  
SCALE 5X



**SECTION F-F**  
SCALE 5X



**DETAIL G**  
SCALE 5X

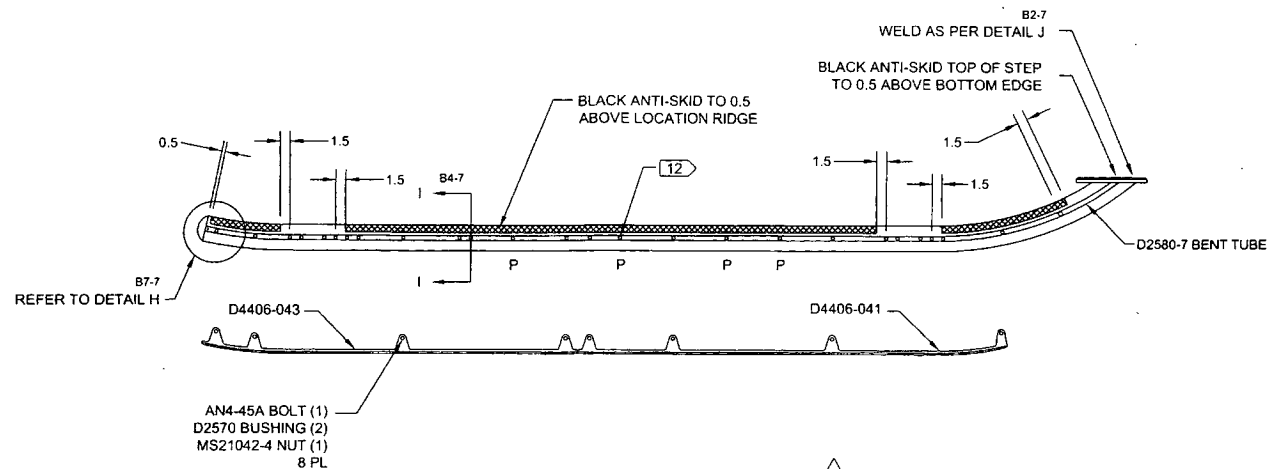
AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:  
1. CHAMFER HOLE 0.050 X 45°  
2. INSERT D2579 SPACER (24 PLACES)  
3. WELD INTO PLACE AND GRIND FLUSH  
4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

DESIGN	<del>4</del>	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<del>10</del>	DRAWING NO.	REV. E
MFG. APPR.	<del>10</del>	D2580	SHEET 4 OF 8
APPROVED	<del>10</del>	TITLE	SCALE
DE APPR.	<del>10</del>	205 SKIDTUBE ASSEMBLY	NT
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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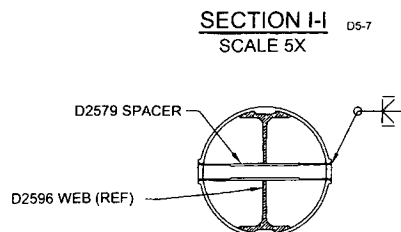
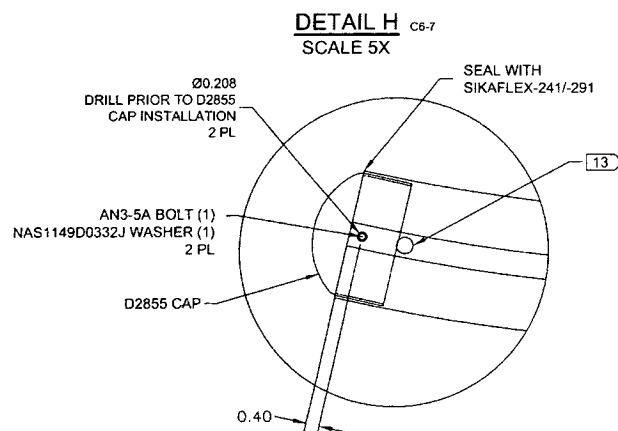
DEO ATTACHED  
RELEASED  
2011-08-29



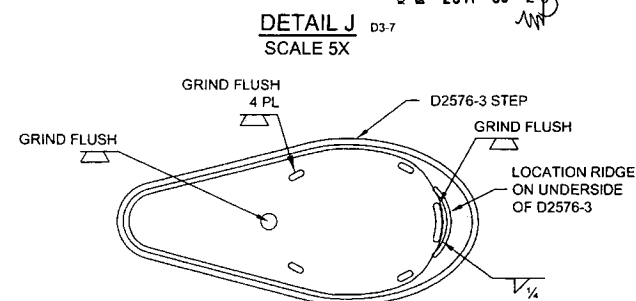




D2580-047 ASSEMBLY DETAIL E



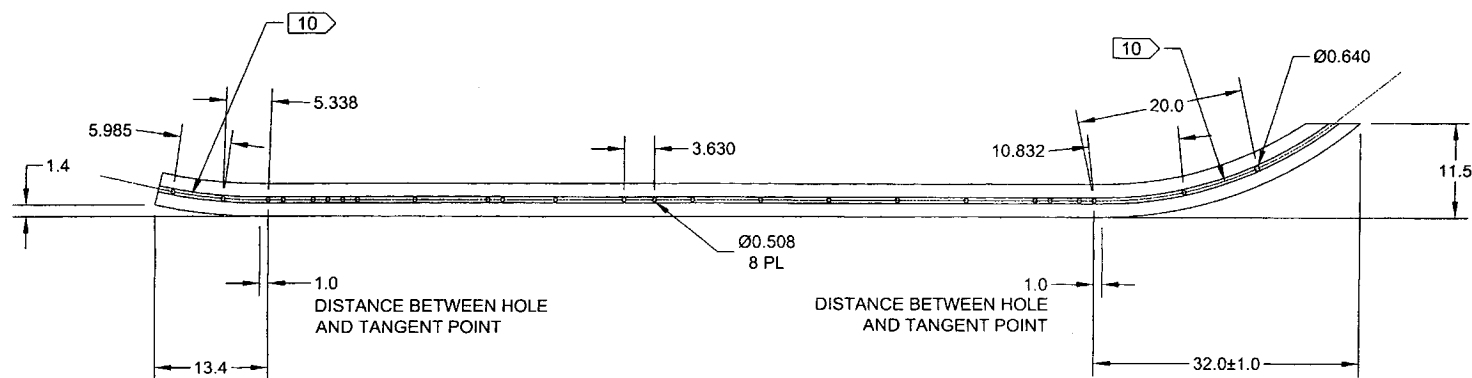
- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:
1. CHAMFER HOLE 0.050 X 45°
  2. INSERT D2579 SPACER (25 PLACES)
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C-BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP



DESIGN	RF	<b>DART AEROSPACE LTD</b>	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 6 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DEO ATTACHED  
RELEASED  
2011-08-29

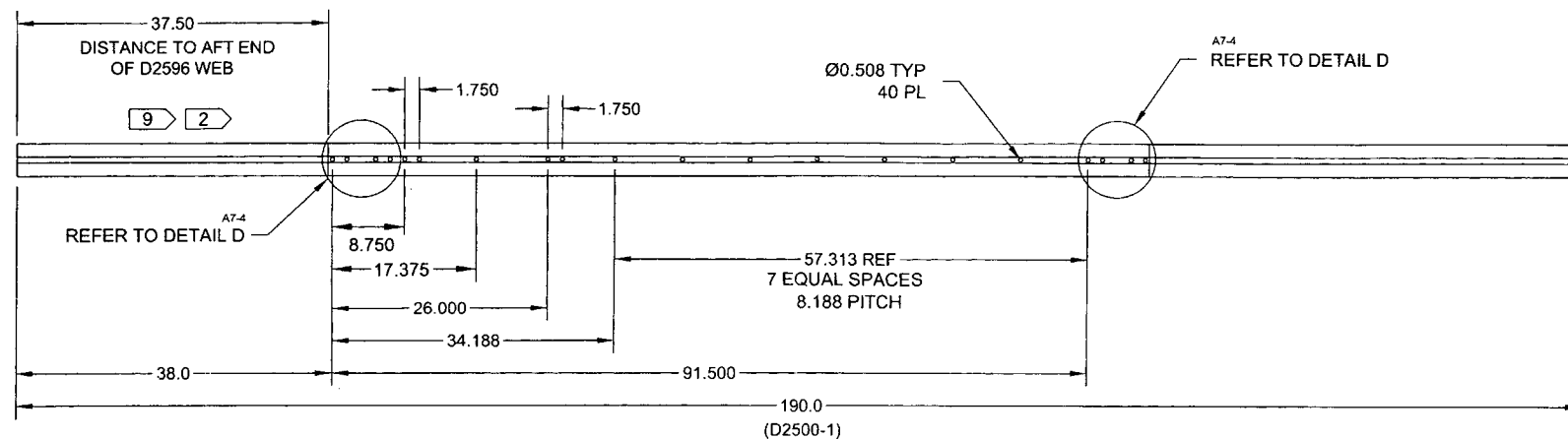




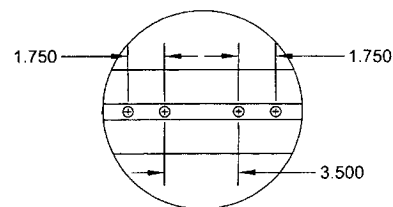
DEO ATTACHED  
RELEASED  
2011-08-29  
NW

DESIGN	#	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	10	DRAWING NO.	REV. E
MFG. APPR.	10	D2580	SHEET 7 OF 8
APPROVED	10	TITLE	SCALE
DE APPR.	10	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	





D2580-101 TUBE

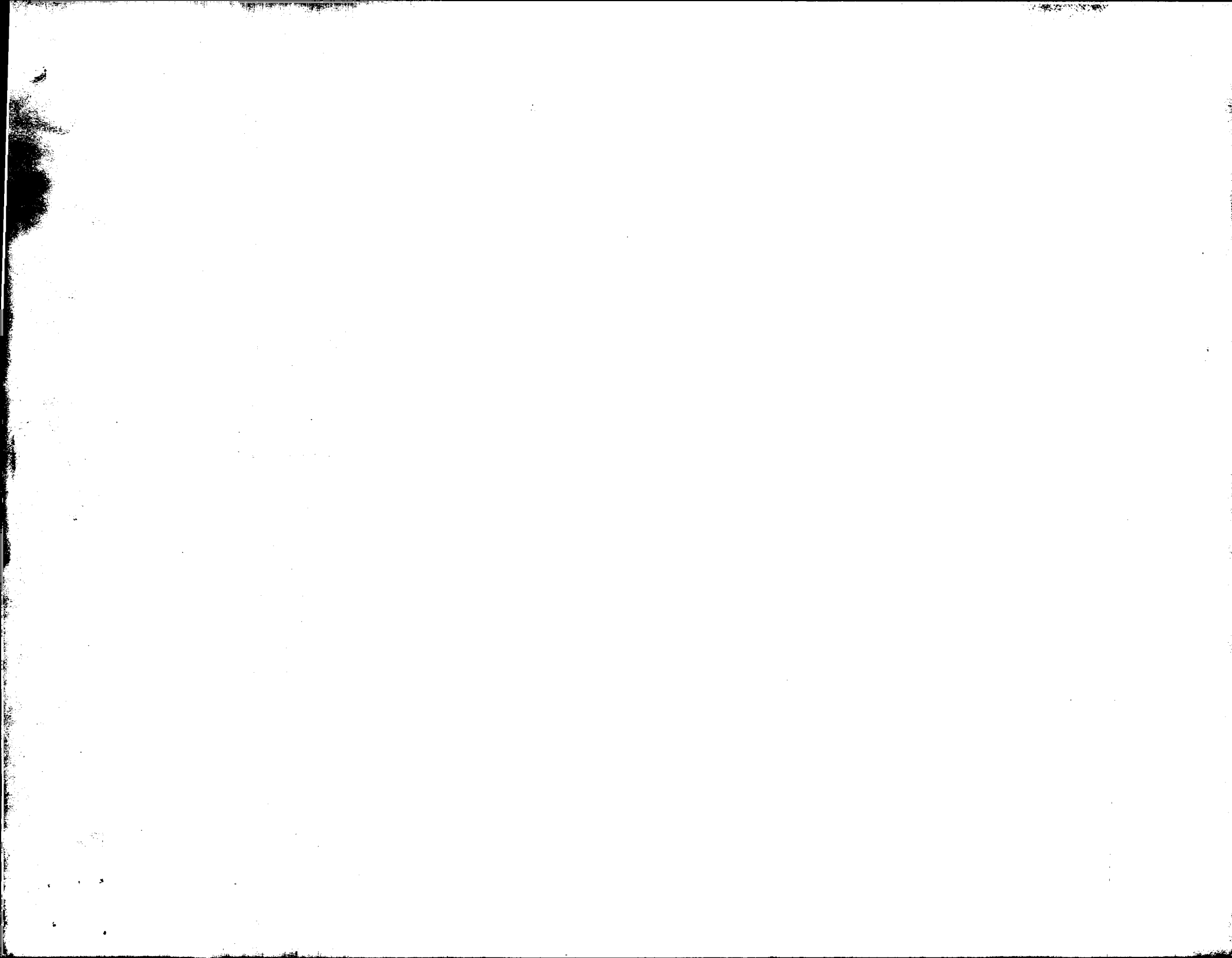


DETAIL D D3-4  
SCALE 5X C7-4

DEO ATTACHED

RELEASED  
R 2011-08-29

DESIGN	#	DART AEROSPACE LTD	
DRAWN	RF	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AP	DRAWING NO.	REV. E
MFG. APPR.	IS	D2580	SHEET 8 OF 8
APPROVED	AP	TITLE	SCALE
DE APPR.	#	205 SKIDTUBE ASSEMBLY	NTS
DATE	11.06.21	COPYRIGHT © 1996 BY DART AEROSPACE LTD	
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DRAWING NO. D2580	TITLE 205 SKIDTUBE ASSEMBLY	REV. E	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2580-E-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>ASS</i>	MFG. APPR. <i>ER</i>	APPROVED <i>HA</i>	DE APPR. <i>HA</i>			
DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13	DATE 11.12.13			

**PURPOSE:**

CHANGE ALL C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

**CHANGE:**

PARTS LIST IS AMENDED AS FOLLOWS:

**WAS**

QTY -041	QTY -045	QTY -047	PART NUMBER	DESCRIPTION
20	24	25	D2579	CROSS BOLT SPACER

**IS**

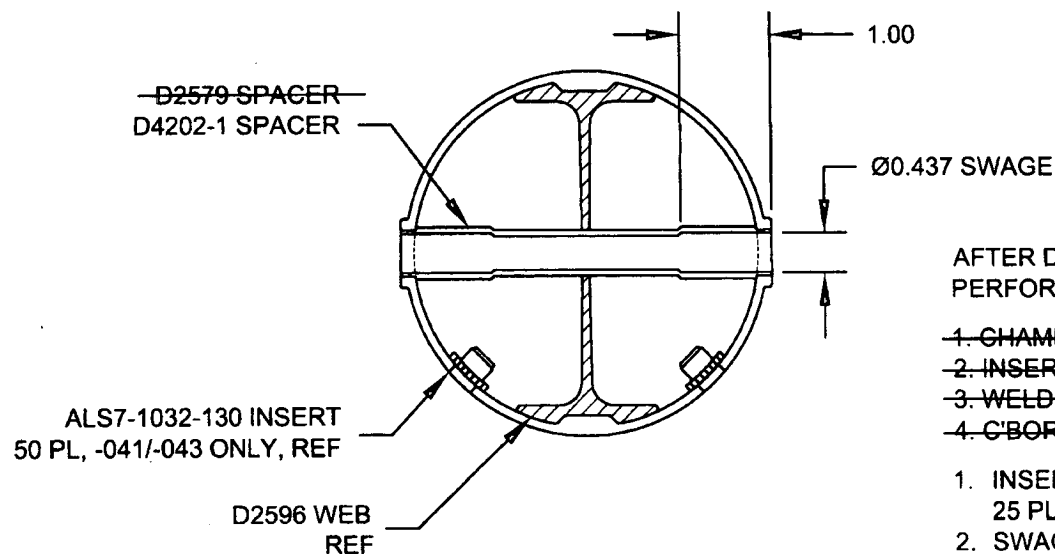
QTY 20	QTY 20	QTY 25	PART NUMBER	DESCRIPTION
	4		* D2579	CROSS BOLT SPACER
			D4202-1	SPACER

SECTION B-B, SECTION F-F, & SECTION I-I ARE AMENDED AS FOLLOWS  
FOR ALL HOLES THAT WERE ORIGINALLY C'BORED:

**\* FOR -045 SKIDTUBE ONLY:**

WELD 4X D2579 SPACERS PER DWG  
IN LOCATIONS MARKED "NO C'BORE".  
REF SHEET 4 OF DWG.

RELEASED  
2011-12-14



AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

- ~~1. CHAMFER HOLE 0.060 X 45°~~
- ~~2. INSERT D2579 SPACER (20 PLACES)~~
- ~~3. WELD INTO PLACE AND GRIND FLUSH~~
- ~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 20 PL (-045) OR 25 PL (-047)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

**SECTION B-B, F-F, I-I**  
NOT TO SCALE



## Linda Lacelle

---

**From:** Sian Willems <swillems@dartaero.com>  
**Sent:** December-13-12 8:43 AM  
**To:** Diana Hagen; 'Linda Lacelle'  
**Cc:** 'Marc Bellavance'; Holly Menard; Nancy MacLeod; Shannon Hadley  
**Subject:** FW: D205-634-011 Skid Tube spares

Hi Diana,

Please quote \$6,095 for D2580-041 Skidtube Ass'y (no wearplates/gaskets)...one time only price, do not enter into intuitive. This counts as a spare, no customer discounts.

The customer needs to indicate on the order that the skidtube is being provided without wearplates/gaskets & corresponding installation hardware.

Hi Linda,

This is a little out of the ordinary so can you please provide a lead time?

Thanks,

*Sian Willems*

Customer Support  
T: 1-613-632-5200 ext 239  
F: 1-613-632-5246  
C: 1-613-676-0577  
[swillems@dartaero.com](mailto:swillems@dartaero.com)



Product Documentation: Verify Revision Status/Download [HERE](#)

---

**From:** Stewart Kedar [mailto:Stewart.Kedar@rescuehelicopter.com.au]  
**Sent:** December 12, 2012 4:52 PM  
**To:** 'Marc Bellavance'

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other

\* **Cc:** Willems, Sian; Smith, Pat; Hagen, Diana  
**Subject:** RE: D205-634-011 Skid Tube spares

G'day Marc, Diana, All,

That's great news, thank you very much. Diana, per Marc's comments below, could you please work out a price for me and let me know the lead time?

Many thanks,

## Stewart Kedar

Engineering Stores / Administration.

Hunter Region SLSA Helicopter Rescue Service - Westpac Rescue

[stewart.kedar@rescuehelicopter.com.au](mailto:stewart.kedar@rescuehelicopter.com.au)



[www.rescuehelicopter.com.au](http://www.rescuehelicopter.com.au)

Phone: +61 (02) 49520043

Engineering Fax: +61 (02) 49520044

---

**From:** Marc Bellavance [<mailto:mbellavance@dartaero.com>]

**Sent:** Thursday, 13 December 2012 8:33 AM

**To:** Stewart Kedar

**Cc:** Willems, Sian; Smith, Pat; Hagen, Diana

**Subject:** RE: D205-634-011 Skid Tube spares

Hello Stewart,

It would seem like we could provide you with replacement skidtube only as follows:

- D2580-041 Skidtube Assembly (Standard), NO WEARPLATES/GASKETS

You can contact Diana Hagen ([DHagen@darths.com](mailto:DHagen@darths.com)) from our Sales Department for pricing and lead time.

Best regards,

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped. <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other





Please consider your  
environmental responsibility  
before printing this e-mail.

**Marc Bellavance**

Technical/Shop Support

T. 613-632-5200 | C. 613-676-0992 | F. 613-632-9311

1270 Aberdeen Street, Hawkesbury, Ontario, Canada, K6A 2K7

**Technical Publications: Verify Revision Status/Download [HERE!](#)**

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---

**From:** Stewart Kedar [<mailto:Stewart.Kedar@rescuehelicopter.com.au>]

**Sent:** Thursday, December 06, 2012 6:27 PM

**To:** 'mbellavance@dartaero.com'

**Subject:** D205-634-011 Skid Tube spares

G'day Marc,

Last month we had to change a skid tube on one of our B412's, as we had a crack about 1½" long, right in the area where the I-beam is inside the tube, so it could not be repaired. We ordered and got a ~~D205-634-011~~ which comes complete with all the mounting hardware, brackets, skid plates etc. As the damage was limited to the small area of the actual tube itself, we were able to salvage all of the mounting hardware and all but one of the skid plates, from the "old" skid tube. We carry several of the skid plates as spares anyway, as well as the gaskets, rivnuts, bolts etc, so changing these is no issue.

What we are wondering is do you provide just the "basic" skid tube as a spare, and if so, what price would one be please? Going by the drawings in the STC, we think the basic tube could be p/n D2580-041, for our D205-634-011 assembly, - is this correct?

The tube we had to replace had only done around 400 hrs TSN, and at over \$7,500.00, + freight, we wouldn't want to have to change too many of these, being a charity funded EMS organisation. We are hoping we can just buy the "basic" tube to have on hand as a spare, and re-use or build-up a kit of the hardware etc from the remaining serviceable parts we are gathering here as "left-overs" after several skid tube assembly changes over the years.

Please let me know if you can help us out here.

Regards,

**Stewart Kedar**

Engineering Stores / Administration.

Hunter Region SLSA Helicopter Rescue Service - Westpac Rescue

[stewart.kedar@rescuehelicopter.com.au](mailto:stewart.kedar@rescuehelicopter.com.au)

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

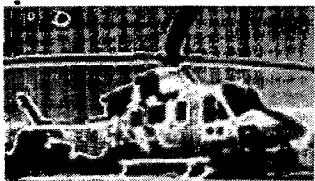
QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Skid-tube <input type="checkbox"/></td> <td style="width: 25%;">Crosstube <input type="checkbox"/></td> <td style="width: 25%;">Water Jet <input type="checkbox"/></td> <td style="width: 25%;">Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

**FAULT CATEGORY**

<b>Landing Gear</b> <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	<b>General</b> <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other



[www.rescuehelicopter.com.au](http://www.rescuehelicopter.com.au)

Phone: +61 (02) 49520043

Engineering Fax: +61 (02) 49520044

NCR: Yes / No

**WORK ORDER NON-CONFORMANCE / UPDATE**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order: _____  Part No. _____  NCR No. _____	<b>DISPOSITION</b>  Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	<b>AGAINST DEPARTMENT/PROCESS</b>  <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
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Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data									
Equip/Tooling									
Operator									
Material									
Setup									
Other									
Process									
Supplier									
Training									
Unapproved									

**FAULT CATEGORY**

Landing Gear	General	Other
<input type="checkbox"/> Bending	<input type="checkbox"/> Bend	<input type="checkbox"/> Grain
<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Hardware
<input type="checkbox"/> Cracks	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Inspection Incomplete
<input type="checkbox"/> Crushed/Crimped.	<input type="checkbox"/> Burrs	<input type="checkbox"/> Instructions Incomplete/Unclear
<input type="checkbox"/> Cuffs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Maintenance
<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Countersink	<input type="checkbox"/> Mislabeled
<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Misread
<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Offset
<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Drawing	<input type="checkbox"/> Out of Calibration
<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Finish	<input type="checkbox"/> Out of Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Folio	<input type="checkbox"/> Outside Dimensions
		<input type="checkbox"/> Ovalized
		<input type="checkbox"/> Over/Under tolerance
		<input type="checkbox"/> Part Incorrect
		<input type="checkbox"/> Part Lost/Missing
		<input type="checkbox"/> Part Moved
		<input type="checkbox"/> Positioned Wrong
		<input type="checkbox"/> Power Loss/Surge
		<input type="checkbox"/> Pressure/Forced
		<input type="checkbox"/> Temperature/Cure
		<input type="checkbox"/> Weld
		<input type="checkbox"/> Wrong Stock Pulled
		<input type="checkbox"/> Other